



CASE STUDY

The Morongo Casino Resort & Spa Cabazon, CA



Mechanical Construction

Entertainment/Hospitality: Hotels/Resorts

GENERAL CONTRACTOR:
EMCOR Energy Services, Inc.
Norwalk, CT

CLIENT:
Morongo Band of Mission Indians
Banning, CA

ENGINEER:
Syska Hennessey Group
San Diego, CA

MECHANICAL CONTRACTOR:
University Marelich Mechanical, Inc.
Anaheim, CA

ELECTRICAL CONTRACTOR:
Dynalectric (LA)
Los Alamitos, CA

SCHEDULE:
12 months from contract execution, including all design and permitting activities.

PROJECT COST:
\$15.7 million

TECHNICAL SOLUTIONS
Relationships
Quality Service
VALUE ENGINEERING
Experience
Project Schedule & Coordination
EXPERTISE

- Design/Build
- Bid Build
- New Construction
- Retrofit/Renovation
- Electrical Construction
- Mechanical Construction
- Facilities Services
- Consulting Services

VALUE DELIVERED

Leading-edge cogeneration capability; increased energy independence; more reliable power source; cost savings and other positive economic returns; expansion capability; expert design/build construction; “fast-track” project delivery; ongoing operations and maintenance expertise.

CLIENT OBJECTIVES

To construct an on-site cogeneration facility that would provide reliable power for its new resort and spa.

SCOPE OF SERVICES

To help this client achieve its reliability objectives, EMCOR Energy Services teamed up with Syska Hennessey Group to install a 13,000-sf cogeneration facility. Built for 100 percent uptime, the facility, which includes space for expansion, contains a high-voltage system with 12.4-kilovolt paralleling switchgear. A substation transforms the 12.4 kilovolts to 480 volts for use in the casino.

The plant’s basic equipment includes:

- » Four 2-megawatt engine-driven generators that use natural gas for environmentally friendly energy production.
- » Three diesel-powered backup generators
- » Two 2,000-ton centrifugal chillers with chilled water distribution pumps.
- » One 1,200-ton paraflow absorption chiller
- » Four 16,000-gallons-per-minute cooling towers
- » Two 8,000 lbs/hr heat recovery boilers
- » Four selective catalytic reduction units
- » One 5-kilovolt substation.



301 Merritt Seven
Norwalk, CT 06851
T: 203.849.7800 • F: 203.849.7950
www.emcorgroup.com

The Morongo Casino Resort & Spa Cabazon, CA



EMCOR SOLUTIONS

This client had experienced frequent power outages and poor power quality from the existing utility grid. Consequently, when EES and Syska Hennessey Group presented a proposal for building a 6-megawatt cogeneration plant—a proposal that included a favorable cost/benefit analysis—the client asked to hear more, even though construction on its new resort was just about to begin.

Within 30 days, EES and Syska Hennessey created a plan for integrating the existing designs for a central plant and the hotel's mechanical system into a new cogeneration plant that would power the entire resort without using the utility grid. This "islanded" approach enables the client to avoid future departed load or stranded cost charges – as much as a cent and a half per KW. These charges would have accrued under California regulations if the resort had hooked up to the utility grid and then become self-sufficient.

In addition, EES found that it could significantly improve the client's economics by expanding the project to 14 megawatts (including back-up resources) and changing the objective from meeting electrical power needs only to meeting both electrical and thermal needs.

As an added energy-efficiency feature, the plant recovers heat from the cogeneration generators' cooling system and exhaust, and directs it through the absorption chiller to create chilled water. When the absorption chiller does not use all of the waste heat, heat recovery/heat exchangers use that heat to displace the heat produced by the hot water boiler and domestic water heater. An internal control system automatically starts and stops the cogeneration units to optimize the use of waste heat energy.

After several years in operation, the plant is both a power and an economic success, and the client is considering a similar solution to its other power needs.

OTHER INFORMATION

As part of the original design/build agreement, EMCOR Energy Services signed a 10-year operations and maintenance contract with this client. The contract, which includes two additional automatic five-year renewals, calls for six-man operating staff which mans the installation on a 24/7 basis.

CLIENT BACKGROUND

Located near Palm Springs, California, the \$250-million, 584,000-sf Morongo Resort & Spa includes a 28-story hotel with a rooftop lounge, casino, spa, and restaurants, as well as a 1,700-car parking garage.



This document contains confidential and proprietary information and is intended solely for the internal business use of EMCOR Group, Inc. and its subsidiaries ("EMCOR"). The download, reproduction, or use of this document (in whole or in part) by anyone other than an EMCOR employee is not permitted and the distribution or display of this document (in whole or in part) to anyone other than an EMCOR employee is not permitted without the prior written consent of the Marketing and Communications Department of EMCOR Group, Inc. This document should be returned to EMCOR immediately upon request.

Copyright 2011, EMCOR Group, Inc., All Rights Reserved



301 Merritt Seven
Norwalk, CT 06851
T: 203.849.7800 • F: 203.849.7950
www.emcorgroup.com